

IN THE CLAIMS

The following claims are pending in the present application:

1. (Previously presented) An apparatus for implementing mouse function and scanner function alternatively, the apparatus comprising:

an input device for having a region capable of scanning including a position tracing region for detecting a transition of position of said apparatus; and

an image processor for receiving an image data from said input device and storing, if a predetermined amount of said image data is collected, the image processor reading out the image data collected at said position tracing region and then detecting the transition of position of said apparatus, the image processor receiving user's selection with regard to any one of the mouse function or scanner function and transmitting corresponding information according to the selected function to the outside, wherein said corresponding information is information with regard to the transition to X, Y axes concerning the position of said apparatus if the user selected the mouse function, and is information with regard to the transition to X, Y axes concerning the position of said apparatus and image data detected from whole of said region capable of scanning if the user selected the scanner function, wherein said position tracing region for detecting the transition of position among the region capable of scanning of said input device is positioned in a predetermined region of said region capable of scanning, and said position tracing region is an integral part of said region

capable of scanning.

2. (Cancelled)

3. (Previously presented) The apparatus according to Claim 1, wherein said image processor includes a selection button receiving input of user's selection with regard to any one of the mouse function or scanner function.

4. (Cancelled)

5. (Previously presented) The apparatus according to Claim 1, further comprising a pad indicated with grid for improving accuracy of the movement of the mouse function or scanning function of said apparatus.

6. (Original) The apparatus according to Claim 2 further comprising a computer either for receiving the corresponding information from said image processor and moving pointer according to the information with regard to the transition of X, Y axes concerning the position of said apparatus or for compensating said image data by using information with regard to the transition of X, Y axes concerning the position of said apparatus.

7. (Previously presented) In an apparatus for implementing mouse function

and scanner function alternatively, a method for implementing mouse function and scanner function alternatively, the method comprising:

(a) receiving user's selection with regard to any one of the mouse function or scanner function;

(b) detecting a transition to X and Y axes concerning the position of said apparatus, by reading out image data collected at a position tracing region, wherein said position tracing region is positioned in a predetermined region of said region capable of scanning and said position tracing region is an integral part of said region capable of scanning; and

(c) transmitting only the information with regard to the X and Y axes coordinate of the transition of position of said apparatus if said receipt of user's selection is the mouse function, transmitting an image data detected from whole of a region capable of scanning together with the information with regard to the transition to X and Y axes concerning the position of said apparatus if said receipt of user's selection is the scanner function.

8. (Previously presented) The method according to Claim 7, said step (b) includes steps of:

determining whether data with regard to a predetermined line or side generated by an input device (100) are stored in a memory device and the position of said apparatus is detected from data stored in said memory device;

performing repeatedly the step of storing data with regard to the predetermined line or side generated by said input device in said memory device if the position of said apparatus cannot be detected from data stored in said memory device;

reading out a predetermined region from the stored data to obtain an image center or the image itself or obtaining and storing X, Y coordinates of a base point through spot of a surface if the position of said apparatus can be detected from data stored in said memory device;

storing said data with regard to a last predetermined line or side after data with regard to a predetermined line or side are generated by said input device, data with regard to a first predetermined line or side stored in said memory device are deleted, and the remaining stored data are moved to a direction of the first predetermined line or side; and

determining the transition of position of said apparatus by obtaining an image center or the image itself from the stored data or by comparing X, Y coordinates of the base point obtained again through spot of the surface with the X, Y coordinates of the base point obtained previously.

9. (Previously presented) The method according to Claim 7, said step (b) includes steps of:

detecting spot of a surface from reading each of the images of the surface consecutively through two regions of the transition of position of said input device while the user uses the scanning function, and indicating the transition of position of said spot in vector by detecting the transition of position of said detected spot;

calculating the amount of straight line movement toward X axis direction or Y axis direction of the other end based on one end of said region of the transition of position by deducting said vector; and

calculating amount of rotation movement of said device by dividing the amount of straight line movement toward said Y axis direction by the amount of straight line movement toward said X axis direction.

10. (Original) The method according to Claim 8, wherein the predetermined region reading out from the data stored in said memory device is a polygon or region of a circle.

11. (Previously presented) The method according to Claim 7, further comprising a step of compensating said image data by a computer that shifts pointer in accordance with the information concerning the transition of position of said apparatus or by using information with regard to the transition of position of said apparatus, wherein said step of a computer compensating said image data includes steps of

(d) initializing related variables;

(e) storing information concerning the transition of position of said apparatus inputted with a predetermined unit of line and said image data;

(f) calculating speed of movement toward X axis direction by dividing distance moved toward X-axis direction by number of lines received, compensating image data toward X axis by compensating line compressively if said speed of movement is slow and by compensating line expansively if said movement speed is fast, compensating said image data toward Y axis direction by shifting as much as the transition of position of said image information compensated toward X axis direction is shifted toward Y axis direction, and storing image data compensated toward X,Y axes direction;

(g) determining whether the scanning is completed; and

(h) returning to step (e) if the scanning is not completed, and completing all of the movement if the scanning is completed.